

## **ABSTRACT**

A composite roof and wall system, three-in-one: fireproof, insulation and waterproofing, which combines fireproof, waterproofing and insulation into one system comprising expanded polystyrene (EPS) foam insulation board; tough waterproofing membrane applied onto the board surface; polyester woven mesh, the reinforcement medium laid over tough waterproof surface; covered by the tough cover, the system's protective part applied onto the mesh. This system can be directly applied onto any existing roof and wall substrate; or pre-constructed into boards, shingles and tiles using tough water proof material to adhere to the existing roof or wall substrate. This system is nail free to avoid leaking problems, survives physical and weather damages. Pigment can be either mixed with the tough cover or applied onto the surface of the cover. It provides an environmentally safe, lightweight, comparatively inexpensive, energy saving, form flexible and long lasting roof and wall systems, which conserve natural resources.